

Rocks and Minerals

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PETER ZODAC

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1940

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ROCKS and MINERALS

PEEKSKILL, N. Y., U. S. A.

The Official Journal of the Rocks and Minerals Association

Chips from the Quarry



WE ARE SPOTTED

A most pleasant incident occurred on the evening of December 5th in the Public Library in Plainfield, N. J., when R. Emmet Doherty and Peter Zodac, President and Secretary, respectively, of the Rocks and Minerals Association, paid it a visit prior to attending a meeting of the Plainfield Mineralogical Society.

Arriving at the library about an hour too soon, they wandered into the main reading room to pass the time away. The first thing to catch their attention was the display of Strategic Minerals which the Society had recently placed on exhibition. They spent about 10 minutes examining the specimens, reading the text that accompanied it and commenting on them. Then they strolled over to a table loaded down with magazines and made themselves comfortable.

A few minutes later they glanced up to see the Librarian walking towards them who stopped before the Secretary and said that some one was on the phone desiring information about the meeting of the Plainfield Mineralogical Society and would he (the Secretary) talk to him.

"Why yes," said the astonished Secretary, rising and following her, completely nonplussed how the Librarian knew they were in any way acquainted with the Society (this was their first visit

to Plainfield and no one knew they were to be there). The gentleman at the other end of the phone was calling from a neighboring city, Westfield, and he wanted to know if the meeting was to be that night, at what time and if available to the public. He received a favorable answer to all questions.

"How did you know we were acquainted with the Plainfield Mineralogical Society?" asked the Secretary of the Librarian after he had finished talking over the phone.

"Oh, I guessed it" was the smiling reply. "You gentlemen were so interested in that mineral display that I naturally assumed you were mineralogists. I, too, am interested in minerals and that display case has been attracting considerable interest."

Caplan Returns to Brazil

After spending several months in the States, Allan Caplan has returned to Brazil to continue his search for rare gem crystals and fine gem material. He can be reached by writing, Caixa Postal 3951, Rio de Janeiro, Brazil.

Ehrmann's Exhibition Sale Big Success

The exhibition Sale held by Martin L. Ehrmann at the Hotel Robert Morris, Philadelphia, Penna., on Friday and Saturday, December 8th and 9th, 1939, was a grand success in every sense of the word. The specimens exhibited were not only of choice quality, a good cross section of his huge stock from the Calvert Collection, but they were so attractively displayed as to draw many favorable comments from the large group of collectors who attended the two day exhibit. The Exhibition Sale was a financial success so that Mr. Ehrmann, New York City's popular dealer, plans to repeat it next year.

D. J. Atkins, also of New York City, was Mr. Ehrmann's assistant.

Peter Zodac

ROCKS and MINERALS

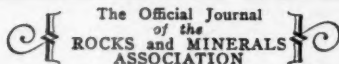
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Vol. 15 No. 2



Whole No. 103

QUARTZ GEM STONES OF CALIFORNIA

By HENRY H. SYMONS, Curator of Museum

State Division of Mines Department of Natural Resources, San Francisco, California

There is a wide diversity of stones that come under this classification to be found in California. Their occurrence has been noted from Oregon on the north to Mexico on the south, and from Nevada on the east to the Pacific Ocean on the west. Undoubtedly each of the 58 counties in this state could contribute one or more varieties to the quartz gem stones.

Among the men who helped to bring these stones to the attention of the public are the following: The late F. M. Myrick who located and operated several gem deposits in Inyo, Tulare, and San Bernardino counties, some of which were blue chalcedony, rose quartz, myrickite (named for him), bloodstone, and others. The late Dr. George F. Kunz who wrote many books and articles on gems, told of California's materials, and operated properties in this state including the chrysoprase mines in Tulare County. The late H. E. Harper of San Jose, and J. J. Kinrade of San Francisco, both lapidaries, who introduced and commercialized the jaspers of the Coast Range of central California—kinradite being named for the latter; also, William B. Pitts of Sunnyvale, who is an ardent gem collector and has donated some of his oolitic and orbicular jasper to nearly every museum of importance in the country.

In recent years there has been renewed interest in the collecting of minerals and the attention of most collectors is centered on materials especially pleasing to the eye, most abundant of these are

the numerous forms of quartz suitable for polishing. Because of this interest, several books have been published on the subject and they include descriptions of inexpensive machinery adaptable for cutting and polishing.

The new collectors began their search for raw material at known sources such as the beaches and deposits previously worked, but in most cases it was found that all choice specimens had long ago been gathered. The more resourceful collectors then extended their inquiries to new fields and some were rewarded by uncovering occurrences where extremely attractive material was found.

The quartz gem stones come from any one of the three minerals, quartz, chalcedony, or opal—all of which are silicon dioxides. The materials suitable for cutting and polishing are usually found in, or associated with, volcanic rock, hot springs, or metamorphic rock. These, however, are not the only occurrences; on nearly any beach and in many streams beautiful pebbles suitable for polishing may be found. The filling of fissures and faults in the formation of veins and pegmatite dikes give some very good material. Siliceous replacements form petrified wood, and deposition of chalcedony nodules and clusters of quartz crystals are common in the lava-capped ancient-river channels of Tertiary times.

QUARTZ

Some of the varieties of quartz that are found in California and used as gem material are rock crystal, amethyst,

smoky quartz, Spanish topaz, citrine, rose quartz, gold quartz, quartz inclusions, etc.

Rock Crystal: A transparent colorless quartz, is found widely distributed throughout the state. Clusters of milky-to-clear quartz crystals are commonly found in cavities in veins, pegmatite dikes, and in ancient-river channels. Probably the best-known source for this material has been the Green Mountain mine, in Chile Gulch, near Mokelumne Hill, Calaveras County, where in lava-capped ancient-river channels associated

with gold-bearing gravels, single crystals have frequently been found weighing up to 100 pounds. One crystal six feet in length and weighing 2800 pounds was shipped from there. This property was located in 1897 and is still being worked. We have on display in our museum a crystal from this property that measures 10 x 14 x 18 inches and weighs 106 pounds. According to Dr. Kunz*, a perfect crystal ball was cut from material

* Kunz, George F., *Gems, Jewelers' Materials, and Ornamental Stones of California*. Bulletin #37, California State Bureau of Mines, p. 69, 1905.



Large clear quartz crystal weighing 106 lbs. from Green Mountain Mine, Mokelumne Hill, Calaveras County, California.

coming from here, measuring $5\frac{1}{2}$ inches in diameter, and another $7\frac{1}{5}$ inches in diameter. Good crystals weighing up to several pounds have been found in pegmatite dikes in Imperial, Riverside, and San Diego Counties; also throughout the State there are numerous places where clear crystals are found in vugs or cavities in veins, in geodes, and in lava-capped ancient-river beds. Limpid quartz clear enough for cutting is often found in several localities.

Amethyst has been noted in crystal clusters on rare occasions in several places in the state. Near Howard Springs in Lake County, a pale violet amethyst is found in vugs in basalt. They polish into brilliant light-colored stones. Amethyst has been found at Bodie, Mono County and Idria, San Benito County, also, in Amador County.

Smoky Quartz, Spanish topaz, Citrine, etc.: These transparent varieties of quartz vary in color from pale yellow through all the tones of brown to almost black. They are found in many sections of the state. In our museum, we have a crystal $4 \times 4 \times 12$ inches of smoky quartz from Placerville, El Dorado County, which is milky at the tip and transparent-smoky at the base, and also a smaller crystal from Shake Ridge near Volcano, Amador County. Other occurrences are noted in Butte, Riverside, and San Diego Counties.

Yellow crystals of quartz have been found in Alameda County, at the Newman mine, 12 miles east of Livermore, and at Bald Mountain in Sierra County.

Rose Quartz—both the opalescent and clear variety, are found and range in color from pale pink to deep rose and usually in massive form rather than in crystals. The best material comes from Tulare County where there are several recorded occurrences. The rose quartz on the west side of Tobias Mountain is clear and shows asterism when polished. It has also been found in Alpine, Amador, Butte, Kern, Lassen, Plumas, Riverside, and San Diego Counties, and other localities.

Gold Quartz—White massive quartz impregnated with more or less gold is found in many of the gold mines along the Mother Lode, the East Belt, and in Nevada and Sierra Counties. Much of this is very attractive when cut and polished.

Quartz containing inclusions: Inclusions of fine hairlike crystals of rutile and tourmaline, actinolite and asbestos, also green chlorite are not uncommon and are found in several localities. Known occurrences of hair stone, the variety having asbestos fiber inclusions are in Amador and Los Angeles Counties; tourmaline in San Diego County; rutile in San Bernardino County; actinolite in El Dorado County, and chlorite in Placer and Mariposa Counties. Another type of inclusion widely found in California is where fine particles of minerals are suspended through a body of quartz giving it the color of the suspended mineral and the hardness of quartz. The following: mariposite in quartz, dumortierite in quartz and silicified limonite are examples, but do not include all that are found.

Mariposite in quartz: This brilliant emerald-green mineral, when found well impregnated in quartz, cuts and polishes well, and occurs in association with the gold quartz veins of Mariposa County and other Mother Lode Counties as well as Nevada and Sierra Counties.

Dumortierite-Quartz is found in both the deep blue and lavender shades, in boulders near Ogilby, Imperial County, also occurrences have been noted in Riverside and San Diego Counties.

Silicified limonite, which is golden brown and finely banded, was found at Carson Hill, Calaveras County.

CHALCEDONY

The mineral chalcedony and some of its varieties such as jasper and chrysoprase, are abundant and give wonderful possibilities for those interested in gathering stones for cutting and polishing:

Chalcedony (including agate, catenite, California moonstone, etc.) is com-

mon as a beach stone in this state: Redondo Beach in southern California, and Pescadero Beach in central California, being the best-known locations for gathering beach stones. Occurrences of nodules or geodes of chalcedony in volcanic rock are not uncommon. The blue chalcedony in rhyolite, found south of Death Valley in San Bernardino, is most beautiful. A ledge of stratified chalcedony at Casmalia Beach, Santa Barbara County, which was apparently used for arrowheads by the Indians, should polish nicely. In the Berkeley Hills in Alameda County, nodules and geodes of chalcedony in rhyolite are found at several locations. They vary in color from light gray to blue, and others are colored green by chlorite inclusions.

Onyx consists of layers of different colors of chalcedony. At the Manhattan Quicksilver mine, Knoxville, Napa

County, there are several outcrops of an onyx having white, and various shades of gray to black layers. This material is also found in several places throughout the mine.

Jasper is undoubtedly the most plentiful of all the stones described here and has a greater diversity than all the rest of the quartz gem stones found in California. It has a wide variation of color combinations and in it are found shades of red, green, yellow, blue, brown, and even black and white. It is also known by a wide variety of names such as basanite, bloodstone, banded jasper, brecciated jasper, chert, prase, hornstone, kinradite, orbicular jasper, oolitic jasper, paradise jasper, plasma, rainbow jasper, ribbon jasper, touchstone, and many others.

These jaspers are common in the Franciscan and Monterey formations associated with chert, also in lenses in the



Blue chalcedony geode in rhyolite from Lead Pipe Springs, San Bernardino County, California.

serpentes, and other places. Much of this material is badly shattered and not suitable for polisling. One of the best localities in which to find jasper is Santa Clara County. South of San Jose near New Almaden, H. E. Harper obtained his orbicular jasper and oolitic jasper, also from this same locality comes the so-called paradise jasper, a moss jasper, and several others. Kinrade obtained his jasper (kinradite) from the north shore of the Golden Gate in Marin County. Then too, in the excavation for the north pier of Golden Gate Bridge, some very nice material was found. Brecciated jasper recemented with chalcedony is found in southern Monterey County near Stone Canyon and in northern San Luis Obispo County, also at Nelson Creek, Monterey County. Banded jasper of good quality is found 31 miles east of Dagget, San Bernardino County. Jasper has also been described in Alpine, Calaveras, Del Norte, Fresno, Humbolt, Los Angeles, Napa, Nevada, Placer, Plumas, San Ben-

ito, San Francisco, San Mateo, Siskiyou, Sonoma, Trinity, and Tuolumne Counties.

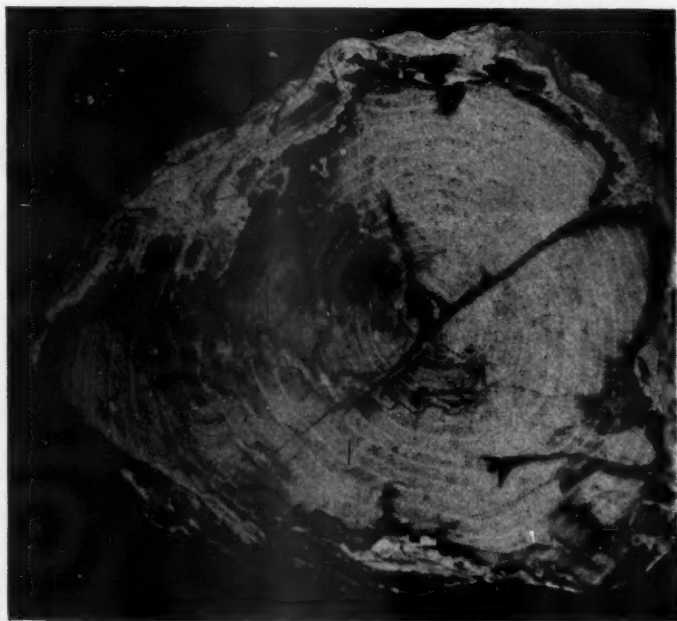
Bloodstone is found on Bogus Mountain 18 miles northeast of Yreka, Siskiyou County, and at the south end of Death Valley in the Panamint Range, Inyo County.

Chrysoprase, a chalcedony having a beautiful light-green color, was found in several localities near Porterville, Tulare County. These deposits are now practically all depleted, only some inferior material remaining.

Myrickite, a chalcedony colored with cinnabar and usually a brilliant red contrasted with white, was first found in San Bernardino County, but other occurrences have since been noted in several of the quicksilver mines of the state.

OPAL

The mineral known as *Opal*, a hydroxide of silicon, occurs in many places throughout the state but material of gem



Petrified wood from Redrock Canyon, east of Mohave, Kern County, California.

quality is extremely rare with the exception of prase-opal, hyalite and opalized wood; Gem opal has been found on Black Mountain 25 miles north of Barstow, San Bernardino County and Fire opal near Dunsmuir, Siskiyou County.

Prase-opal or chrysopal, a beautiful green variety, is found associated with chrysoprase in Tulare County and in a chromite prospect near Knoxville, Napa County.

Hyalite, the colorless variety, is found in vesicles or small cavities in volcanic rock, in Lake and Sonoma Counties where they have been cut and sold as "Sonoma County diamonds." This variety has also been noted in several other localities.

Silicified and Opalized Wood: The replacement of the wood fibres with opal or chalcedony called petrification, is found in abundance in California. This material is common in the lava-capped ancient-river channels and in areas of volcanism where the wood has been exposed to hot waters ascending from the lavas. Portions of trees from 10 to 30 ft. in length and from 15 inches to 2 feet in diameter, are not uncommon at the Petrified Forest, near Calistoga, Napa County; in some of the drift and hydraulic mines throughout the state; in the desert portion of southern California; and in the Modoc lava beds.

A WAR INCIDENT

How active service in war fails to repress the scientific mind is illustrated by an incident involving the the department of geology at Field Museum of Natural History, Chicago, Illinois, and a noted French scientist.

Monsieur André Cailleux, of Paris, for years has studied the sands deposited by the great ice sheets of the Glacial Period at the time of their greatest advance. His object has been to learn something of climates which prevailed at that time. To do this, he determines under the microscope how much wind-blown sand is mixed with the other sands in these deposits. Large quantities of such sands would indicate a climate dry enough to allow loose sand to be blown about by the wind. He has found that there was a general period of dry weather at the close of the glacial period.

Henry W. Nichols, chief curator of geology at Field Museum, while examining under the microscope a sand he collected recently from the glacial deposit at Antioch, near the northern edge of Illinois, noticed the presence of numerous wind-polished grains. He sent samples to M. Cailleux, as a leading authority, for verification. The following reply was received:

"Thank you heartily for your kind letter and samples. I will study the latter only after the victory. I am now a lieutenant of artillery in the French Army. We are very enthusiastic here and all decided not to finish the war before Hitler and the German militarism are knocked out.

"Very truly yours,

"A. Cailleux

"P. S.: Just a look at your samples: both contain eolian grains, but No. 1 seems to be much more eolian than No. 2."

"Thus," commented Curator Nichols, "the scientist emerges in spite of himself. The postscript indicates a characteristic of the typical scientist who, however determinedly he may try to put aside his science because of involvement in some other activity, cannot refrain from consideration of a scientific problem presented to him."

Mr. Nichols states that M. Cailleux' verification of the presence of wind-blown (aeolian or eolian) sand indicates that at some time about 18,000 years ago the climate of the Chicago region was much dryer than it is at present.

GEODES OF THE KEOKUK AREA OF IOWA

By FRANK L. FLEENER

Joliet Junior College, Joliet, Illinois

One of the North American most-famed areas for the collecting of geodes is in the Keokuk and Warsaw beds of the central Mississippi valley. Specimens of geodes from this region adorn the cabinets of practically every museum of the world. Here the geodes occur in a shale, some thirty feet in thickness, which crumbles rapidly upon exposure to the weather, releasing the numerous geodes which it contains.

Essentially, geodes are rounded or nodular masses formed upon the walls of pre-existing cavities by inward growth of mineral matter. Those most highly prized by collectors are hollow and lined with crystals, but in many cases the process of growth was prolonged until the cavity was entirely filled. In most instances geodes consist of a shell of chalcedony, lined within with bright, transparent crystals of quartz, or, at times, white or grayish botryoidal chalcedony, or they may contain colorless crystals of calcite. Very often there are to be found in the cavity, besides the principal mineral which lines it, crystals of lead, zinc or iron sulphide.

Geodes are not always rounded in shape. Some do not even remotely resemble this shape, being very irregular and nodular. A few even are found that are flattened, giving every evidence of having been crushed by the weight of the overlying deposits. The shape of the geode depended originally upon the configuration of the pre-existing cavity; if it was spheroidal, then the geode was round; if irregular, the resulting geode would have corresponding knobs and bumps.

In size, geodes vary from the size of a peanut, like those that occur south of Montrose, Iowa, up to giant geodes some three feet in diameter, some of which may be seen in the collection of Mr. R. G. Veith, 2502 Main St., Keokuk, Iowa. It is interesting to note that large and small geodes are not intimately associated in any given horizon; how-

ever, the range in size may vary considerably at different levels in the same exposure. It is also noticeable that their size may show great variations at the same horizon in different localities.

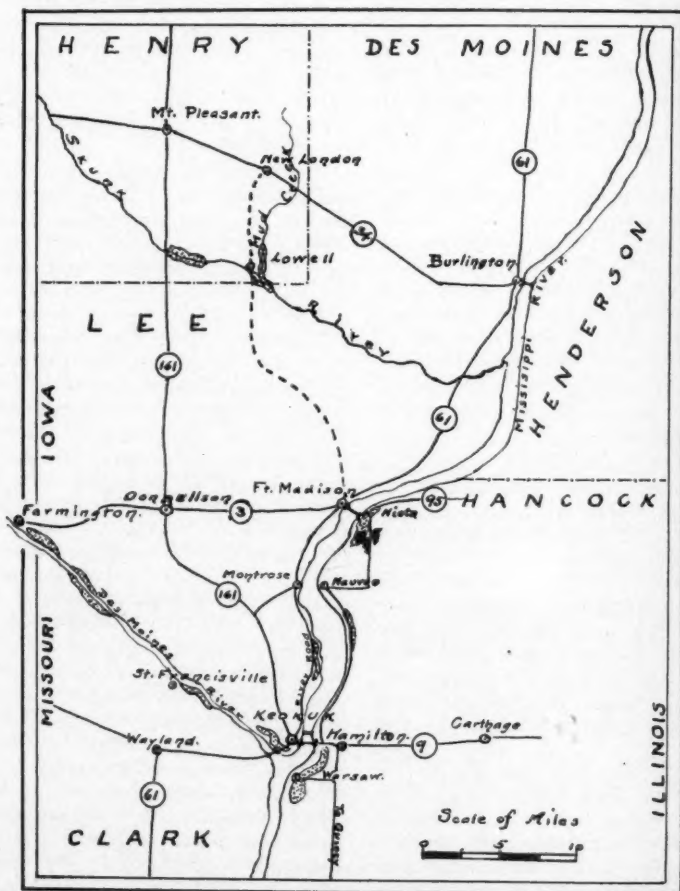
Geodes, also show a remarkable range in their distribution, both laterally and vertically. In some places they are so numerous in a given layer as to interfere with the process of growth, producing very irregular shapes. Again, they may be very few in number or even absent entirely. This is also true of different levels in the same locality. Why these variations occur makes an intriguing problem not easily answered.

The origin of geodes is a mooted question, because any theory advanced to account for these interesting structures must also explain the origin of the pre-existing cavities. Naturally there has been no lack of theories suggested for a subject so interesting. One of the first was put forth by Dana, who in his *Manual of Geology* stated that they were formed by the deposition of mineral matter in cavities formerly occupied by sponges. This idea is now practically abandoned for lack of substantiation. No sponges of the proper size and shape have been found in the geode beds. A similar suggestion was made by N. S. Shaler, in a paper entitled "Formation of Dikes and Veins," in 1878. From his study of the geodes of the Knobstone shales of Kentucky, he came to the conclusion that they were formed within cavities resulting from the heads of crinoids, these, of course, being greatly enlarged as the process of growth progressed. This hypothesis has also been much questioned by geologists, because of the failure to find the necessary plates of the crinoid heads embedded in the shells of the geodes. Some have even suggested that the cavities were produced by the bulbous roots of certain crinoids, but again evidence in support of the theory is lacking.

One of the more recent contributions made to the elucidation of this problem

was put forth by Dr. F. M. VanTuyl, in his paper on the "Stratigraphy of the Mississippian Formations of Iowa", to be found in Volume 30 of the Reports of the Iowa Geological Survey. After carefully studying the occurrence of geodes in the numerous exposures in this area, he concludes that their origin is intimately related to the calcareous concretions which may be observed at some of the exposures. These nodules, being more readily removed by solution, provided

the necessary cavities in which the geodes could be formed. Moreover, where present, these nodules occupy the same relationship to the containing strata as do the geodes, and possess the same shapes. Altogether, this simple solution of the problem of the origin of geodes seems to be the most reasonable, largely because it does not require the intervention of any agencies which are not apparent to an observer.



Sketch Map showing the location of some of the more prominent geode-collecting localities in the Keokuk area. State roads, in full lines, are all paved; dashed roads are gravel.

A few of the localities where geodes may be collected in this area are here-with listed, hoping that the information may be of value to some readers of **ROCKS AND MINERALS**.

The classic area for the collecting of geodes is located east of Lowell in Henry County, Iowa. Here, about a mile east of the town, along Mud Creek, a tributary of Skunk River, great quantities of geodes have weathered out of the shales and collected in the bed of the stream. Some of the most perfect specimens to be obtained in the area have been collected at this point. At this time, however, owing to the activities of "rock-garden-artists", the number has been temporarily considerably depleted.

In the vicinity of Keokuk, along Soap Creek, there is an excellent opportunity to collect geodes, but at this point, while they are more numerous, they are more fragile. Great care has to be taken while cracking them, or they shatter into a large number of pieces. The beauty of the interior of the geodes obtained here is often enhanced by the presence of crystals of dolomite and ankerite, which is not noticeably the case elsewhere.

On the eastern side of the Mississippi River, in Illinois, geodes may be found about a mile northeast of the city of Quincy, in the bed of Cedar Creek. Also near Warsaw, excellent geodes in great numbers occur along the bed of the gully below the stone bridge on the northeast

edge of the city; especially is this true after a hard rain. Also, at Hamilton, geodes are numerous and easily obtained in the pits of the Hamilton Clay Company, where they have been sorted from the shale during the process of excavation, and along the bed of Crystal Glen Creek, two miles southwest of town. Farther up the river at Niota, Illinois, some peculiar geodes filled with a black, viscous bitumen may be found along the bed of a small creek in the southern part of the town. Strange to relate, geodes obtained at other outcrops in the vicinity do not show bitumen.

Several well-known exposures of the geode-bearing shales occur in Missouri, one of the most outstanding being at the old town of Fox City, northwest of Wayland on the Fox River. Near here the geodes have a wide range in size and contain a wide variety of minerals. Little or no calcite is found in the cavities, but there seems to be an abundance of pyrite crystals. Because of the unusual attractiveness of the geodes found here, they have been collected in great numbers for commercial purposes, blasting having been resorted to at times in order to hasten their removal.

On the East Fork of the Fox River near Wayland, geodes containing beautiful calcite crystals are found. Many fine exposures of the geodiferous shale occur along the river, from the vicinity of St. Francisville up the river as far as Farmington.

School's Unique Collection

Public School 87 of Queens, Long Island, N. Y., is making a unique mineral collection of hand specimens, one from each state in the Union and no two specimens alike. As the collection has but recently been started, it is far from being complete. If any of our readers would like to assist the school with a mineral specimen from their locality, we are very sure that it will be gratefully received. Send specimens to Merton McKown, Curator, Public School 87, Ridgewood Station, Brooklyn, N. Y.

A Satisfied "Rock Hound"

Editor "R & M":

More power to your pen for the New Year and may the hobby of acquainting people with that grand, exciting, entertaining and educational pastime of collecting and studying minerals never fail you.

I have been a "rock hound" since '98. Give me a flat rock for a bed, a boulder for a pillow, baked mescal for breakfast, fresh water from the Viznaga (barrel) cactus, a coyote for a playmate, the heavens above for a roof and I am satisfied. Wasco, Calif.

Charles Bishop
Dec. 19, 1939 (Chucawalla Charley)

SYNTHETIC EMERALDS AND CORUNDUMS

Synthetic corundums (and spinels), in a wide variety of colors, are the only synthetic gems on the market, having the chemical composition of the original, and it would be well for mineral collectors to acquaint themselves with these artificial stones and to learn how to distinguish them. The best way of course is to buy one of each and compare them with the real gems. The following notes, however, may be of much value and interest to our readers.

Synthetic Emeralds

The Wm. V. Schmidt Co., *House of Stones*, 22 W. 48th., New York City, announce that the synthetic emerald is not being produced commercially and so is *NOT* a threat to the genuine emerald any more than synthetic rubies and sapphires are to the real stones. So far as they know, no synthetic emeralds have ever been offered for sale to jewelers, and none have been made large enough to cut stones much over one carat in size. The cost of production is said to be so high as to make synthetic emeralds prohibitive in price, commercially.

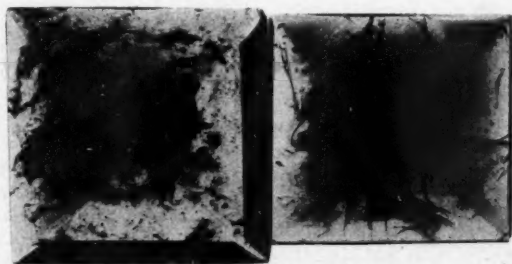
Thorough tests in this country and abroad show that the synthetic has lower refraction, lower specific gravity, stronger fluorescence, and different spectrometer readings than the natural, *but the easiest telltale characteristics for the mineral collector are the peculiar veil-like inclusions of the synthetic stone when seen under his magnifying glass. See illustration.*

As for any possible effect of synthetic emeralds on the public or on the value of the genuine emerald, it is only necessary to remind the collector that synthetic sapphires and rubies have been made *commercially* since 1910, and the synthetic spinels since 1926. And these synthetics, the only synthetic "minerals" in the market, have only served to intensify the public's desire for, and enhance the value of the genuine.

Synthetic emeralds have been produced in a German laboratory. While their manufacture is a distinct scientific achievement, it has no commercial significance as has been stated.

Synthetic Corundums (Ruby and Sapphire)

The most important distinguishing characteristic of the synthetic are the *curved striations* (or *striae*). Natural stones having "grown" into natural shapes (crystals), show under the magnifying glass characteristic "growth", "grain", or "color" lines which are *straight*, or form angles composed of straight lines. In most star sapphires, for example, these straight lines are easily visible to the naked eye. The curved lines in synthetics are due to their method of manufacture, of course rounded bubbles (air), fusion marks, or other indications of manufacture immediately identify a stone as synthetic. See illustrations.



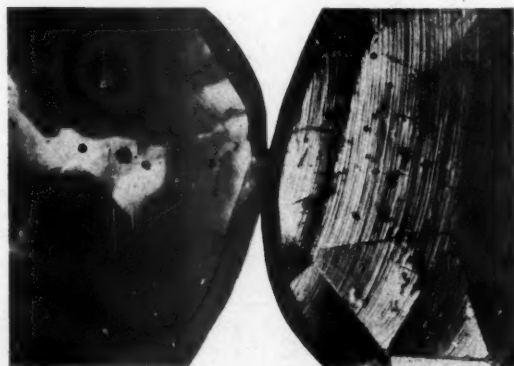
Natural emerald

Synthetic emerald

Note the veil-like inclusions in the synthetic specimen.

*Natural Sapphire**Synthetic Sapphire*

Note straight color lines in the natural specimen; curved lines and rounded bubbles in the synthetic specimen.

*Natural ruby**Synthetic ruby*

Note straight lines and angular "bubbles" in the natural specimen; curved lines and rounded bubbles in the synthetic specimen.

We are indebted to the Wm. V. Schmidt Co., Inc., with whom Dr. F. H. Pough, of the American Museum of Natural History, collaborated in their pre-

paration, for these notes and illustrations, and especially to the company for the cuts they so kindly allowed us to use in presenting this article to our readers.

THE OVER-MONTGOMERY EXHIBITION SALE

December 21-23, 1939

Once every year for the past number of years, Edwin Over, Jr., and Arthur Montgomery, of Colorado Springs, Colo., and New York, N. Y., respectively, have held an exhibition sale of outstanding minerals, featuring those which they personally collected. The sale is held during the latter part of December, in New York City, and lasts three days, although in February, 1938, one was also held in Philadelphia, Penna., for two days.

Edwin Over, Jr., and Arthur Montgomery are two of America's most noted field collectors. For a number of years, during the summer, the two young men have selected localities in the West which they have leased and operated, together, exclusively for mineral specimens. In this way a large number of some very unusual, rare or spectacular specimens have been uncovered to enrich the collections of private individuals and museums. No one knows what locality they plan to work as a summer approaches but as the winter months draw nigh some inkling of the locality worked and specimens obtained is released through a page advertisement in *Rocks and Minerals*. It is at the annual Exhibition Sale that full information is given through printed signs on display and in the minerals themselves. The Exhibition Sale is conducted by Mr. Montgomery; Mr. Over remaining in the West to collect additional specimens from other localities.

The Over-Montgomery Exhibition Sale is an institution of great value from an educational and mineralogical standpoint. For not only are the specimens of very choice quality but they are fully labelled and come from many of the world's most famous localities. They cover rare polished minerals, rough and cut gems, loose crystals, and fine crystallized specimens in particular. Complete suites of specimens from a worked locality, together with enlarged photographs showing occurrence and geology, help to give collectors an idea of the formation of minerals. Hundreds of specimens are on display, many of which are mu-

seum pieces, and not behind closed doors or under glass covers but out in the open, in plain view, so that they can be taken in the hands and more closely examined. The Exhibition Sale, moreover, is the Mecca for all mineral collectors. The most prominent in the country, at least those residing within a radius of 500 miles of New York City, are often to be seen in attendance. It is one of those rare occasions where a friend meets friends or makes new ones.

For those who have not visited one of these annual events, we shall devote a few lines in explaining how they are conducted. Every mineral on display is for sale and its price is on the label that accompanies it, both being in a small paper tray. Small bundles of tags with the wording on each — "Sold to" are conveniently on hand together with many thumbtacks. If a collector desires to purchase a specimen he simply writes his name on one of the tags which he then pins with a thumbtack to the side of the tray containing it, providing that specimen has not been taken by some other collector. After a collector has finished selecting the specimens he wishes to purchase and is preparing to leave, he tells Mr. Montgomery. Mr. Montgomery will then go around with the collector to make a memorandum (in duplicate) of every specimen selected; or the collector may do this himself. After the selection is recorded, the collector pays the amount of his purchases and leaves. The selected specimens, however, remain on exhibition until the exhibit is over when they are packed up and mailed to the purchaser. The collector's tag, bearing his name and accompanying each specimen paid for, will in the meantime, insure that that specimen will not be purchased by another. This is an excellent arrangement because no matter what time other collectors may call, all specimens originally on display are still present even though many of them are no longer available for purchase, but still

available for examination. There is no one urging a collector to buy, nor is there any fee for admission. The exhibition Sale is open to the public. Mr. Montgomery gives a cordial welcome to everybody, and he is completely sincere when he says that interest alone is all that is required of any visitor. However, many of the specimens are so attractive and reasonably priced that one must use great will power to pass them by even if he is only mildly interested in minerals.

But we are digressing. Let us confine ourselves to the 1939 Exhibition Sale. This was held Thursday to Saturday inclusive, December 21 to 23, from 9:00 a.m. to 9:00 p.m., in a large and spacious room on the 30th floor of 1 E. 44th St., New York City. So keen was the interest in the exhibit that before it was officially opened three collectors were found waiting in the hall. By 10:00 a.m., over 30 had visited the display and selected specimens.

We arrived on the first day shortly after 10:00 a.m. and found the room full of collectors. Before we had a chance to close the door, Mr. Montgomery had rushed up to greet us, suggesting that we take off our hat and coat and make ourselves at home. This we proceeded to do after we first shook hands with Dr. F. H. Pough, O. Ivan Lee, Jack Boyle, Ernest Weidhaas, Joseph D'Agostino, Floyd Faux, Curt Segeler, Merton McKown, John C. Pohl, Jr., A. B. Crunden, and others present. But we had hurry and get busy in examining the specimens on display because with 30 collectors already ahead of us some of the specimens which we might like to get may already have been picked by some one else.

We came to the exhibit with the intention of purchasing a certain number of specimens, but were so carried away by the beautiful display, we bought twice the number. In order to make a careful selection, we had first to examine, roughly, the entire selection on display and found on the first tour that 630 specimens were on the four long tables and one short

one provided for them. Each specimen was numbered consecutively, consequently the number on the label of the last mineral on the last table indicated the total number of specimens present. On the second tour we began to study in detail those specimens which especially appealed to us. It was quite a problem in trying to make a selection as we had to carry in our mind many details as—how much money were we going to spend on purchases and how to keep within this limit? What class of specimens should be purchased—crystals, crystallized? Are they of the size we desire? Are they still available? Are they missing from our collection or do we already have them?

We made at least 12 tours of the tables in the morning and on each tour saw something not noticed before. We might approach a specimen from a different angle when an unseen crystal would be exposed to us or some other mineral be called to our attention by a collector. It was also an experience to go around with collectors and have them call our attention to something which they had spotted. It was also an additional experience to examine those specimens purchased by others and to reflect in our mind what particular attractions they possessed for the purchasers. Be it understood that every specimen on display was of high quality but some were outstanding for the brilliance of coloring, large crystal form or other characteristic which would attract one's eye more than any other.

On the first table were two or three rows of very attractive, polished, dendritic uraninites from the Ruggles Mine, Grafton, N. H. Each specimen was accompanied by its own radiogram picture. Many collectors do not understand these pictures, but the specimens really photograph themselves when the radioactivity of the uranium minerals affects the photographic plate. The specimens had been collected, polished, and photographed by the Schortmann brothers of Easthampton, Mass., who made up a special lot of them for the exhibit. It was a pleasure, to see that one of the

most interesting specimens had been tagged by Harold C. Buckelew, of South Orange, N. J.

A very fine little colorless celestite crystal from Gloucestershire, England, attracted our attention and we were tempted to buy it; it was a little small and so we hesitated with the thought in mind that we might pick it up later. On a later visit we found it was tagged by Ernest S. Jaros, of New York City.

A lovely demantoid garnet associated with asbestos from Val Malenco, Veltlin, Italy, was spotted on our first visit but no attempt was made to tag it. J. N. Trainer's tag said in mineralogical language: "I was here first, boys!" This is a rare specimen and seldom seen in collections; at least a dozen collectors expressed their regrets in not being able to get it.

O. Ivan Lee's tag was observed on a tray containing white hydrozincite from Goodsprings, Nevada, and immediately our thoughts centered on titanite (he is the "titanite king"). So we hastily looked around and soon spotted one marked "sphene" consisting of tiny brownish gemmy crystals (very fine) on a gray granitic rock from Dorfer Alpe, by Pregratten, E. Tyrol. "Is Lee slipping?" we asked ourselves as we frantically tacked our tag to the tray, "in thus allowing this fine specimen to get away from him, or does he already possess it?" We found out later that the hydrozincite fluoresced blue, which Mr. Lee had suspected and for this reason had taken it.

A white crystallized analcite was noted tagged by A. B. Crunden, of Montclair, N. J., and out of curiosity we pushed it to one side a little to read its label. Its locality was not New Jersey as we had thought but Kerguelen Island. "Where is this island?" we asked of collectors nearby. No one knew and Mr. Montgomery was appealed to, who informed us that it is somewhere in the South Seas, close to the South Pole region. "Whew!" we whistled softly to ourselves, "no wonder Mr. Crunden took it. This makes the specimen of extreme in-

terest", and we mentally congratulated him on his new acquisition. A very interesting specimen from a far off and slightly known island! We wondered who could have collected it. Too bad there was not another specimen as we would have tagged it eagerly! Examination of an atlas later disclosed the fact that the island is in the Antarctic Ocean, approximately located 70° E. Long. and 50° S. Lat. Mr. Crunden is keenly interested in localities, due no doubt to the fact that he does a lot of traveling and so has the opportunity of visiting far off places. He is furthermore keenly interested in photography; he takes excellent pictures which he colors himself.

There was a brilliant red specimen in approximately the center of No. 1 table that attracted every collector to it. It would be picked up, viewed at many angles and even held towards the light and with mournful looks be put back into its place. Why? Because it was tagged by J. F. Morton of the Paterson Museum. This very fine and almost gemmy specimen which measured 2" in diameter, was part of a huge crystal of rhodochrosite. Its locality was the Sweet Home Mine, Alma, Colo., which produced the finest rhodochrosites in the world.

An unusually fine wire silver from the celebrated silver mines near Kongsberg, Norway, appealed to us and we tried desperately to affix our tag to its tray but without success. "This tray is sure tough," we muttered as we bent low to see why it could not be penetrated. We had been trying to drive our tack through the head of another, holding J. D'Agostino's tag in place. For a moment we were tempted to push a little harder as the specimen was a very good one but we drew back. "Joe is a nice fellow," we consoled ourselves, "and he deserves a good specimen, too."

Then one of those rare occasions arises when we are asked to assist a collector in deciding which mineral of two he should select. "Which of these two tetrahedrites would you advise me to take?" asked Mr. Floyd Faux, of Beth-

lehem, Penn., pointing to one from Bingham, Utah, containing large crystals and then to another (smaller crystals) from the Herodsfoot Mine, Cornwall, England. "Well," we began, trying to feel big and important, "our choice would be—," but we could not finish as Mr. Faux had made his decision. His tag attached to the tray containing the Utah specimen was his choice. But how did he know that that was the same mineral that we would have picked? He must be a mind reader and if so knows that we know he is a nice fellow. To verify our suspicions, a few minutes later he gave us some good news—that he was preparing a paper for ROCKS AND MINERALS on an interesting mineral occurrence in his vicinity.

Later in the day the English tetrahedrite was tagged by R. W. Babb, of Ramsey, N. J. This was also an interesting specimen worthy of any collection. While Mr. Babb was busy in examining the specimens on display, Mrs. Babb, who was also present, spent the time at her disposal admiring two large and very beautiful rutilated quartz spheres that seemed to fascinate her. These spheres had been made by Carl Supp, of Brooklyn, N. Y., a protege of Jack Boyle of the Brooklyn Children's Museum.

Soon we were joined by Jack Boyle. Jack is one of the most popular mineralogists along the Atlantic Coast; everyone knows him and he knows everyone. We were, however, a little shamefaced in meeting him because in the editorial which appeared in the Feb. 1939, issue of ROCKS AND MINERALS we had inadvertently spoken of him as "Joe" Boyle. This error was not called to our attention until a few weeks ago. A thousand pardons, Jack. Some day we will try to atone for this!

"Those brown apatites in salmon calcite from Renfrew County," he said, as we were examining a number of fine specimens "are from Turner Island, in Lake Clear, Renfrew County, Ontario, Canada. The lake is about 5 miles long and the island about $\frac{1}{4}$ to $\frac{3}{4}$ miles. The locality is about 15 miles west of

the city of Renfrew. Turner Island is honeycombed with narrow open pits of no great depth. The pits were dug for apatite which was used as a fertilizer. Titanite crystals (brown in color) and gray wernerite also come from here. The island is about a mile from the mainland and is reached by a rowboat. When I was there, a few years ago, the water was so rough that I got soaked to the skin." Jack Boyle, incidentally, picked out for himself a blue indicolite tourmaline section from Maine.

Before the exhibit was over a dozen or more of Mr. Boyle's pupils, present and former, had come in.

We moved to the small table which was filled to overflowing with polished specimens of so lovely a greenish hue and all of different designs that a collector seeing them for the first time would become frantic in trying to decide which one to select. The specimens were variscites from Fairfield, Utah, and were collected by Over-Montgomery during the summer of 1937. As we already possess six or seven in our collection, we tried not to be tempted. One small but very lustrous specimen fascinated us so we were slowly starting to affix our tag when some one called to us and the spell was broken. We moved on to the next table.

The first three or four rows on No. 3 table were devoted to those gorgeous red vanadinites from the old Yuma Mine, near Tucson, Arizona, and the deep orange red wulfenites from the Red Cloud Mine, near Yuma, Arizona, all collected by Over, alone, during the winters of '38 and '39. The specimens were remarkable not only for their coloring but also for the excellence of their crystals. For some reason or another these specimens at first did not seem to appeal to collectors but towards the close of the exhibit they were taken up fast. We were pleased to note that a very fine vanadinite was tagged by R. V. Gaines while a gorgeous red wulfenite was acquired by Curt Segeler.

N. G. D'Ascenzo, of Philadelphia, Penna., who specializes in quartz cry-

stals and their inclusions, found a new specimen for his collection. This was a nice rock crystal which enclosed a small yellow scheelite crystal—a new type of quartz inclusion. This specimen was collected in the Dragoon Mountains, Arizona, by Mr. Over.

Harry C. Grahl, of New York City, spotted a large orpiment from near Mercur, Utah, that he just had to have. It was a magnificent specimen but much too large for the average collection. "Oh, well," said Harry, "I'll trim it down and get three or four good specimens out of it. I just got a new rock trimmer and this will give me an opportunity to try it out." Can you imagine that! A collector buying an expensive mineral to experiment upon!

A fine blue barite crystal from near Sterling, Colorado, intrigued the veteran collector, John A. Grenzig, of Brooklyn, N. Y. We understand Mr. Grenzig has a magnificent collection and some day we hope to see it.

Charles W. Hoadley, of Hartford, Conn., who specializes in loose crystals, obtained a very fine one of cuprite. It was a large modified octahedron from Globe, Arizona.

A very fine water-clear hyalite in a geodiferous cavity from Mexico was pointed out to us and we longed to have it. For some reason we neglected to tag it; a few minutes later we went out to lunch and on our return found it tagged by J. W. Radu, of New York City. Noting our look of disappointment Mr. Montgomery tried to encourage us by saying that if the specimen did not fluoresce Mr. Radu would return it. "If he sends it back," we instructed Mr. Montgomery, "rush it up to us as we want it." These instructions were given December 21st and to date the specimen has not arrived. Apparently it fluoresces!

John P. Snyder, a young collector of 13 years, from Floral Park, N. Y., came in during a quiet period with his father and a young friend, and we proceeded to take him around. To our amazement and great joy, the lad acted like a seasoned collector. He examined the exhibit carefully, commented on the beauty

of many of the specimens and chose his specimens with much thought and deliberation. But when he selected a malachite pseudo after azurite and assured us that he knew what a pseudomorph was, we were so astonished that we failed to note the locality of his new acquisition. We believe it came from Bisbee, Arizona. Later the gorgeous yellow wulfenites from Hilltop, Arizona, fascinated him greatly and he wanted a specimen. But all the smaller specimens were taken and nothing was left available except large museum sizes. Noting the youngsters's keen disappointment, and recalling our experience with the Mexican hyalite, we pointed to a nice wulfenite and asked him if he liked that. "Why that is the best one in the lot!" he replied. "Well," we answered nonchalantly, "that specimen carries our tag. We will remove our tag and you can insert yours." This was done. John is a very fine boy, a credit to mineralogy and a member of the Rocks and Minerals Association. We wish we had many more like him interested in our fascinating hobby.

After releasing our gorgeous wulfenite we walked diagonally across the room and tagged that very fine polished variscite from Fairfield, Utah, which had so fascinated us earlier in the day. We noticed that alongside of it was one that was almost its duplicate which was tagged by Mrs. S. Crowley, of New Haven, Conn.

John C. Pohl, Jr., of Easton, Penna., secured a magnificent loose kunzite crystal, at least 4 inches long, from Pala, Calif. He too has a marvellous collection as can be attested when nothing but the best goes into it. A quiet, friendly, and courteous gentleman, Mr. Pohl is as regular in attendance at mineralogical functions as is the appearance of the sun on a clear day.

There were two collectors present, together, whom we were very glad to see and we were curious to know, too, what they might pick for their collection. These gentlemen were Ernest H. Wilson and his son-in-law, Walter P. Sachs, both of Caldwell, N. J. Mr. Sachs has

a most remarkable collection, built up by Mr. Wilson over a great many years,—the most complete private collection, regarding species, known in the East, and with only a few exceptions, every specimen is 2 x 3 inches in size and of choice quality. What then could he find at Montgomery's exhibit that was not in his collection, that was 2 x 3 inches in size, and still available? We know he got one—a very fine, crystallized and unusual specimen of polycrase from Tocantins, N. E., of Rio, Brazil.

A large suite of fine specimens formerly owned by the late W. D. Nevel, of Andover, Maine, a noted collector who was killed by an explosion of dynamite, September 7, 1938, was on display and we thought it would be nice to have a specimen with his own label to add to our collectors' collection. This is a special collection we are making, each specimen of which must carry the original label of a collector. All specimens are different, and no two specimens are from the same collector. We wanted a Maine mineral for this special collection but all Maine minerals that were available did not have his label. So we had to compromise by taking a very fine specimen consisting of sapphire-blue benitoite crystals associated with a lustrous black neptunite crystal in snow-white massive natrolite. This comes from the famous locality near the headwaters of the San Benito River, San Benito County, (about 25 miles north of Coalinga), Calif., where benitoite was discovered in 1907.

At the exhibit we learned that Dr. Frederic D. Zeman, of New York City, was particularly interested in localities and he wanted some rare minerals from Maine. This accounted for his selection of eosphorite, a very fine specimen, of a very rare phosphate, from Newry, Maine.

Ernest Weidhaas, of Pelham Manor, N. Y., the "prehnite king," because his very fine collection is said to boast of 1,000 fine prehnites, could not add a single prehnite to his collection because not even one was on display. But he did obtain a loose 2 inch bent tourmaline crystal from Mesa Grande, Calif. This

crystal had become broken and then repaired by nature. Incidentally Mr. Weidhaas has an unusually choice collection of freaks in minerals—specimens which may bear resemblance to figures, trees, plants, animals and other objects. Some unusual specimens of agate were illustrated in his interesting article *Freak Simulations in Agate* which appeared in the September-October, 1936, issue of ROCKS AND MINERALS.

A very fine specimen of liroconite, from Cornwall, England, consisting of tiny but magnificent blue crystals, was bought by Merton McKown, of South Ozone Park, N. Y.

There were two very interesting pseudomorphs, pyrolusite after manganite, beautifully crystallized though in small crystals of a lustrous silvery gray color on a black quartzose matrix. These came from the manganese mines at Platten, Erzgebirge, Bohemia. Robert K. Brandenberger, of Hartford, Conn., secured one and we took the other.

Mr. L. Kirsch, of Brooklyn, N. Y. obtained a fine ruby corundum crystal, one face polished, from Franklin, N. C. Mr. Kirsch is the oldest living member of the New York Mineralogical Club and he is still collecting at a ripe old age—a real lesson for young collectors.

A very rare specimen of crystallized colorless lewistonite was tagged by Sam Gordon of Philadelphia, Penna. We can understand his interest in this mineral because gordonite, the finest crystallized mineral to come from the variscite locality, of Fairfield, Utah, where lewistonite also occurs, was named in his honor.

M. Allen Northup, of Morristown, N. J., who has contributed a number of interesting articles to ROCKS AND MINERALS contributed one nice specimen to his collection when he tagged a good group of very fine twinned epidote crystals from Green Monster Mountain, Prince of Wales Island, Alaska.

Charles L. Drake, of East Orange, N. J., secured a very interesting specimen consisting of an aquamarine crystal embedded in a smoky quartz crystal, from Mt. Antero, Colorado.

Another interesting specimen in the

Nevel Collection was a beautiful polished lepidolite from Rumford, Maine. This fell into the possession of J. C. Moore, of Bridgeport, Conn., due no doubt to its deep purple color. We recall his interest in colors in minerals and also the fine lectures which he gives on this subject.

Ala Valley, Italy, furnishes a number of very fine minerals such as garnets, clinoclones, diopsides, vesuvianites. A beautiful vesuvianite crystal from this locality was tagged by Joseph W. Grant, of Menham, N. J.

A number of specimens of precious opal as small masses in lava from Red Rock Canyon, Calif., were displayed on No. 4 table that attracted considerable attention. They were of an unusual type and a number of specimens were taken, one of the best, perhaps, by Walter Helbig, of Queen's Village, N. Y.

There was more than one collector at the exhibit who was interested in loose crystals. Dr. B. Schwartz, of New York City, added a beautiful euclase from Brazil to his collection of loose crystals.

A magnificent lemon-yellow wulfenite from Hilltop, Arizona, on gleaming white calcite was secured by Walter E. Kuenstler, of Grantwood, N. J. Mr. Kuenstler has one of the most remarkable private museums in the country—small, compact but up to date—and some day we shall write it up for ROCKS AND MINERALS.

Miss Grace M. Carhart, Peekskill's distinguished geologist and instructor in geology at Hunter College, New York City, graced the exhibit with her presence and among other specimens obtained a very nice topaz crystal from Thomas Range, Utah.

Two other collectors who tagged some very fine loose crystals at the exhibit were Charles Thomas of Wallingford, Conn., who secured a green tourmaline from Mt. Mica, Maine, and A. K. Gvzander, of Jackson Heights, N. Y., who obtained a twinned rutile from California.

While we were examining specimens at No. 1 table we happened to over hear

fragments of a conversation between Mr. Montgomery and a lady who was speaking glowingly of the fine exhibit and stated she had learned of it through ROCKS AND MINERALS of which she was a subscriber. A few seconds later, without waiting for an introduction or for any other excuse we walked up to her and calmly introduced ourselves. "Why, Mr. Zodiac," was her very cordial reception as she smilingly held out her hand to us, "I am very glad to meet you. I am Mrs. E. S. Frith, of Hillside, N. J., and have been a subscriber of yours for many years. ROCKS AND MINERALS is a magazine which is of immense value and interest in keeping me posted on mineralogical topics."

Mrs. Frith remained us of another subscriber, Miss Lucy A. Conroy, of Camden, N. J., who in a recent letter to the editor wrote enthusiastically: "I am so happy in being a member of the Rocks and Minerals Association. I find that collectors are the nicest of people!"

Mrs. Frith obtained a beauty when she tagged a specimen of white, paper-thin crystals of barite on a black background (a very lovely specimen) from the Wincal's Mine, Egremont, Cumberland, England.

During the past summer Over-Montgomery collected a number of fine smoky quartz groups from a new pegmatite locality in the West. Quite a few of these specimens were on display at the end of No. 5 table, of which the largest had been tagged by Joseph J. Kuchar, of Montvale, N. J. It was a large specimen consisting of flesh colored microcline, about 15 inches in diameter, with one huge smoky quartz crystal, about 10 inches high, projecting straight up from its center. A magnificent specimen even though large for a private collection! We personally know Mr. Kuchar but have never visited him and so are not familiar with his collection. Nevertheless the specimen would intrigue us and we would pause in front of it time and time again speculating where he would place it in his collection as it was a fine museum piece. Later in the day, in fact it was pretty close to quitting

time, we happened to approach the specimen from another angle while Mrs. Babb was examining the quartz spheres which were at the end of the same table. One glance at the huge specimen and we stopped in amazement. "Look! we cried out, it's High Point Tower!" For the specimen before us was an exact replica except for color of the tower erected on the highest point of ground in the State of New Jersey. This is in the extreme northern part of the state, in High Point Park, the altitude of the point being 1877 feet above sea level. Truly a marvellous specimen did Mr. Kuchar obtain for his collection and it should now be worth many times the price he paid for it. Perhaps he too saw the resemblance and for this reason tagged the specimen. If by any chance he never visited High Point Tower, we suggest that he do so at his earliest opportunity, take a picture of it, and then compare it with his specimen.

There were many other very fine specimens on display that due to their coloring, crystal form, or other attractive features made us linger over them for many minutes at a time. Some large pyrite cubes from the Ibex Mine, Leadville, Colo., had such lustrous mirror-like faces that they glistened like polished brass. Who could resist them?

The deep purple amethyst was well represented from a number of localities of which those from Rice, Va., were outstanding. We secured a very fine gemmy loose crystal, $2 \times 2\frac{1}{2}$ inches, from this locality. Another crystal that we obtained was one from the celebrated Las Chipas Mine about 15 miles southeast of Arizpe, Sonora, Mexico. This great silver mine is well known for its rich silver mineral specimens.

Rock crystals were also well represented from a number of localities. Two very good ones, one enclosing epidote crystals and the other amianthus fibers, and both from St. Gothard, Switzerland, were tagged by us. On No. 1 table was a fine one from Minas Geraes, Brazil, that must have been 18 inches in length and about 3 inches in diameter. While we were examining it

some one whispered loudly, "Hey, Zodac, drop that toothpick" and we hastily obeyed.

A number of interesting ankerites from Bolts Burn Mine, Weardale, Durham, England, were on display and we obtained two of them—one associated with crystallized violet fluorite and the other with crystallized brilliant black sphalerite.

Another specimen with which we are much pleased was one consisting of chalcopryite, nice bronzy crystals on crystallized white dolomite from the Laxey Mine, Isle of Man, England. In addition it had the original label of S. Hensen.

The last specimen that we secured was a small crystal of cerussite from Tsumeb, South West Africa.

About two-thirds of the material on display was personally collected by Over-Montgomery, most of which was never exhibited before. Among the specimens collected were the beautiful topazes and associated minerals from Thomas Range, Utah; yellow wulfenite from a lead-silver mine, at Hilltop, Ariz.; variscite from Fairfield, Utah; epidote from Prince of Wales Island, Alaska; blue barite from near Sterling, Colo.; aquamarine, smoky quartz, and others from Mt. Antero, Colorado. A new mineral a blue-green crystallized phosphate (not named) from Fairfield, Utah, was also exhibited for the first time. This and other rare, unnamed minerals from the same locality, are being studied at Harvard University by Esper Larsen, 3rd. A number of large and very fine photos showing scenes at localities worked by Over-Montgomery were hung around the room and added to the interest of the exhibit.

The 1939 Over-Montgomery Exhibition Sale was a grand success. A large number of very fine minerals were exhibited and sold. Judging by our personal observations, minerals from the United States localities went the quickest, and the demand was for better grade specimens. Where a large suite of specimens was exhibited whose in-

dividual specimens ranged in price from 15c up to \$10, specimens from \$1.00 to \$5.00 were the first taken. This is a most encouraging sign as it is an indication that collectors are now desiring higher grade specimens. We have tried to list one outstanding specimen taken by those collectors known to us, practically all of whom are members of the Rocks and Minerals Association.

Among the various mineral clubs of the country that were represented at the exhibit by one or more members were: East Bay Mineral Society, Oakland, Calif.; Colorado Mineral Society, Denver, Colo.; Bridgeport Mineral

Club, Bridgeport, Conn.; New Haven Mineral Club, New Haven, Conn.; Mineralogical Society of Hartford, Hartford, Conn.; Maine Mineralogical & Geological Society, Portland, Me.; Newark Mineralogical Society, Newark, N. J.; Plainfield Mineralogical Society, Plainfield, N. J.; New York Mineralogical Club, New York, N. Y.; Queens Mineral Society, Long Island, N. Y.; The Chiselers, Crestwood, Tuckahoe, N. Y.; Philadelphia Mineralogical Society, Philadelphia, Penn.; Mineralogical Society of America; and the Rocks and Minerals Association.

RECENT GOLD STRIKE IN GEORGIA

Much publicity has been given to the recent gold strike at the old Calhoun gold mine in Dahlonega, Georgia. When the Editor of ROCKS AND MINERALS visited the area on a very wet day in March, 1938, everything was peaceful and serene as far as gold mining was concerned. Now conditions are different. The gold strike at the Calhoun mine has changed everything. Mines which have been abandoned for many years are being reexamined and prospected with the hope that one or more of them may also show a bonanza.

In order that our readers may have authoritative information on the new discovery, we have petitioned Capt. Garland Peyton, Director, Division of Mines, Mining and Geology, Atlanta, Ga., to send us some notes. These notes are printed below:

"It is understood that the first rich showing was encountered on Saturday, November 11, 1939, the date on which this office was notified. On Sunday, November 12, I visited the mine and saw a section of quartz vein some two inches in width and 12 or 15 inches in length that appeared to be almost a solid strip—some of the rock taken out was two-thirds gold and the whole strip would unquestionably have assayed over \$60,000 a ton. On this occasion only about three miner's gold pans were removed and the ore in place showed just as rich

after this was taken out as before. The following Wednesday, a number of shots were put in parallel to the vein but about two feet away from it and over a length of about 12 or 15 feet. After these shots were fired and the loose muck was removed, it was discovered that the 12 or 15 inch vein strip mentioned above had lengthened into a strip about seven feet long, all of which appeared to be as rich on the average as the original showing above referred to.

"I feel that the publicity will prove permanently beneficial to the gold district. In the first place, it shows that the idea entertained by the old-timers that rich lenses or pockets extended only in one plane in the Calhoun mine was erroneous. This discovery proves that rich ore may be encountered in any opening which may be made, irrespective of its directional trend—so long as the opening follows the vein. Other benefits which may accrue will be possible prospecting of our gold deposits to depths comparable with those at which gold is mined in other gold districts of the world. The deepest gold mined in Georgia is not more than 400 feet vertically below the surface. In Canada, California and elsewhere gold has been and is being mined to depths in excess of 4,000 feet. I should like to ascertain what our gold deposits look like at 4,000 feet."

.. Collectors' Tales ..

By PETER ZODAC

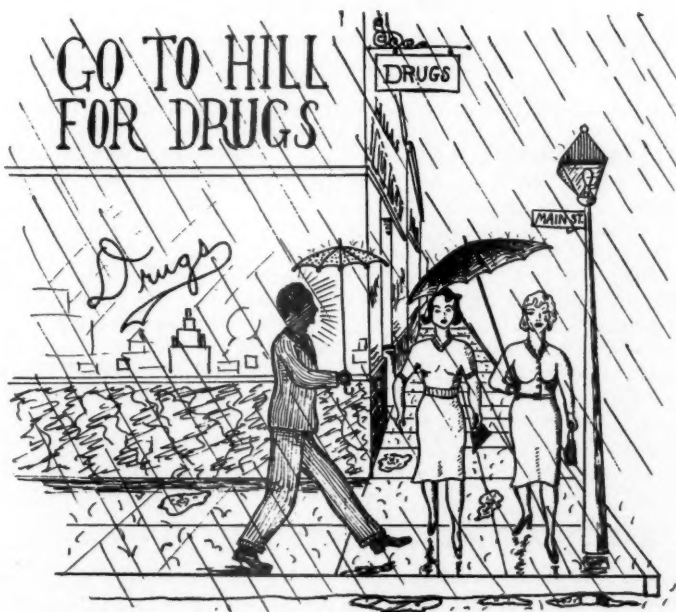
THE TABLES TURNED

Some years ago when I was stationed as a junior mining engineer at a large anthracite mine in the Panther Creek Valley of Eastern Pennsylvania, where some very interesting minerals occur, an event happened to me one Sunday morning which often makes me smile when I think of it. Most of the junior engineers, and a fine lot of young men they were too, made their headquarters at the coal mining company's clubhouse, at Lansford, Pa., and we often went out together to social functions. Many were the good times we had and many tricks did we we play on one another.

One Sunday morning on the way to church I overtook a young engineer,

named Jimmie Smith. It was raining and Jimmie, had an umbrella, all right, but it was one that made me burst out laughing as it was small and brightly colored. I knew immediately the reason—he could not find his own and so had to borrow anything that was available which in this case was a colorful affair belonging to the cook's young daughter.

The funny part of it all to me was that Jimmie was quite a sheik with the girls and I was preparing for a bully good time when we would run into them. I kidded Jimmie all the way to church and laughed at him more than once when he suggested that we trade umbrellas.



An embarrassing situation

As I surmized, he deliberately walked slowly, so as to be late—when there would be very few people on the streets to see him—took the last pew (after hiding the umbrella in the vestibule) and was the first to leave with me following him. Though we hustled away from the church, I was not in the least perturbed because I knew well that when the corner drugstore was reached, just two blocks away, he would stop and wait for the girls to pass by. And stop we did—Jimmie with his small, brightly colored umbrella and I with my man-sized black one. As we waited, he kept begging me to trade umbrellas since, he pointed out to me, I was going back to the clubhouse while he had a date—but I just laughed at him. Jimmie was hidden behind the store while I was out

in the open and could see the people, with a bevy of girls in front, coming towards us. Fifty feet away they were, then 25, 15, and 10—when without warning my umbrella was torn from my grasp so suddenly while another was thrust in to its place that for a moment I was paralyzed with astonishment. There I stood in the open—dazed, bewildered, confused—holding the silly little umbrella over me, directly facing the oncoming girls while Jimmie was strutting up the street as fast as he could go.

Frantically I wheeled around and dashed across the street, heading for the clubhouse as if Old Nick, himself, was after me. I felt so embarrassed and humiliated that at least a week went by before I dared to show my face on the street again.

MINERAL DAY AT THE WORLD'S FAIR

(New York City)

MON., JUNE 17, 1940

Specially set apart for you and all persons interested in mineralogy

PLAN TO BE THERE

Through the indefatigable activity and enterprise of Mr. Joseph D'Agostino, with the Plainfield Mineralogical Society behind him and in the interests of all mineralogists, he has secured from the officials of the World's Fair, the setting aside of June 17, 1940, as Mineralogical Day. Nothing else is to cast a shadow or dim the limelight that will be turned upon minerals on June 17th. Everything will center about them. Unusual interest has already been aroused among Governors of the States of the Union and officials of foreign countries. State and national displays promise to be more ex-

tensive and prominently displayed than last year. Invitations are to be issued through magazines, newspapers and by radio to all mineralogists, geologists, nature lovers and others who may wish for the first time to enter the precincts of the mineral kingdom.

Mark the calendar or note the date in your diary as an important engagement to be kept. And be there bright and early and stay until the affair closes on June 17th that you may miss nothing of importance.

Watch ROCKS AND MINERALS for further announcements.

AMERICAN MUSEUM ACQUIRES FINE OPAL

A magnificent black opal cabochon, of a deep blue color, has recently been acquired by the American Museum of Natural History, New York City, and is on

display in the mineral hall. This very fine gem, about $1\frac{1}{2}$ inches in diameter, comes from Lightning Ridge, N. S. W., Australia.

CLUB and SOCIETY NOTES

East Bay Mineral Society

On Dec. 8, 9 and 10, 1939, a Hobby Show was held in the Oakland Auditorium, Oakland, Calif. With nearly 90 hobbies participating, which attracted a large number of visitors, the Hobby Show was a huge success.

The East Bay Mineral Society, of Oakland, Calif., was represented by a good sized booth fully equipped with lapidary machines. These machines were kept in constant operation by various members of the Society, who served in turn. A three tier show case filled chiefly with cut and polished minerals, extended across the front of the booth. Both exhibits drew a tremendously large amount of interest, probably being the most popular hobby displayed at the Show.

The East Bay Mineral Society, which has a membership of 140, is mainly interested in cutting and polishing minerals.

New Haven Mineral Club

The guest speaker for the February Meeting, that will be held Mon., Feb. 12th, 1940, will be Prof. Daniel T. O'Connell, of the Geology Department, City College of New York. Prof. O'Connell will give an illus-

trated talk "Through the West with Kodachrome", descriptive of a 9,000 mile tour to Yellowstone Park, The Olympian Peninsula, Yosemite and Grand Canyon National Parks.

Club Publications

It is a source of much pleasure and gratification to note the large number of bulletins which are regularly issued by mineral clubs throughout the country. Though many of these bulletins consist of but one page, they contain a lot of interesting notes and news items that are of much value to mineral collectors.

Among the clubs which have ROCKS and MINERALS upon their mailing lists are: The East Bay Mineral Society, Oakland, Calif.; Northern California Mineral Society, San Francisco, Calif.; California Federation of Mineralogical Societies, (Mineral Notes and News, Paul VanderEike, Editor, Bakersfield, Calif.); Colorado Mineral Society, Denver, Colo.; New Haven Mineral Club, New Haven, Conn.; Maine Mineralogical and Geological Society, Portland, Me.; Boston Mineral Club, Boston, Mass.; Plainfield Mineralogical Society, Plainfield, N. J.; and the Queens Mineral Society, Long Island, N. Y.

Yedlin Moves to Maine

Leo Neal Yedlin, our genial member from New York City, has forsaken the bright lights of Broadway for the life of a country squire. He is now residing in Cedar Grove, Lincoln Co., Maine, where in addition to his extensive law practice he will conduct a summer camp for boys.

An extract from a recent letter reads: "The heart of the Maine pegmatite district—Auburn, Topsham, Paris, etc.—is but 30 miles away. The terrain is covered with some 8 inches of snow at this minute but I'll be exploring as soon as the winter breaks."

We are afraid that when summer comes Mr. Yedlin's law practice and even the camp may be sadly neglected, because with Maine's noted mineral localities so close by how can he be held back from visiting them!

Mr. Yedlin's fame as a mineral collector preceded him to Maine. He has been residing there but a few months and now he is not only a member of the Maine Mineralogical and Geological Society, of Portland, but the Club has elected him 2nd Vice-President. Cedar Grove is 40 miles north of Portland.

Desert Magazine Has Mineral Department

A magazine which is in its third year, only, but which nevertheless is gaining wide popularity for its excellent articles and very fine illustrations, is *The Desert Magazine*, of El Centro, California. *The Desert Magazine* is devoted chiefly to descriptive articles of the great West—its deserts, mountains, canyons, mines. But with the November, 1939 issue, it started a mineral department which will be a regular feature of this very interesting magazine.

Our best wishes are extended to *The Desert Magazine* that the mineral department may prove a grand success and that it will draw to it a large number of readers. Incidentally, we heartily recommend *The Desert Magazine* to our readers. It is a monthly and subscription price is \$2.50 a year.

For many months one of the feature articles of each issue has been devoted to minerals illustrated with fine photos and maps and written by John W. Hilton.

CLASSIFIED ADVERTISEMENTS

WORLD'S BEST WANT AD. MEDIUM FOR MINERALS

Rate 10c per word; minimum 10 words. Remittance must accompany copy in all cases. Advertisers must furnish satisfactory references before their advertisements will be inserted. Forms close the 1st of every month.

BOOKS

Handbook For the Amateur Lapidary by J. H. Howard, 16 chapters covering all phases of gem cutting and polishing, 150 pp., 44 illus., price \$2.00. J. H. Howard, 504 Crescent Ave., Dept. R., Greenville, S. C.

How to Collect Minerals. By Peter Zodac. A guide book for the collector, 80 pp., 15 illus., \$1.00. Rocks and Minerals, Peekskill, N. Y.

Fifty Back Numbers of Rocks and Minerals Magazine, all in good condition and all different, \$10.00. If you have back numbers send a list of them with your order and we will try not to duplicate any of them. Rocks and Minerals, Peekskill, N. Y.

FOSSILS

Miocene Fossils From Historical Yorktown, Virginia. Splendid collection \$2.50. Representative collection \$1.00. 10 specimen box 50c. Barclay & Sons, Newport News, Virginia.

Fossils, Minerals, Old Arms, Indian Beaded Trappings, prehistoric specimens, general line of curios. Lists 10 cents. N. E. Carter, Elkhorn, Wisc.

Brachiopods—Six 1½" specimens 25c. Clay Holmes, Kane, Penn., R. F. D. 1.

GEMS

Emerald Rough From Colombia, S. A., loose crystals \$1.00 to \$3.00. Specimens in matrix \$2 to \$15. Unusual formations for collectors from \$1.00 up. Cut stones from \$10 each up. Rough for practice cutting 20c a carat. Gem rough from \$5 to \$50 per carat. Selections sent on approval. Richard H. Van Esselstyn, 3 Maiden Lane, New York.

Labradorite—Gem Quality, \$2.00 per pound. Special price on fifty pound lots and over. John Vlismas, 244 East 77th St., New York City.

LAPIDARY SERVICE & SUPPLIES

Diamonds Saws Cut At Least Five Times Faster than any other type of saw. They use less power, are cleaner to operate and absolutely safe, and what is most important for per square inch of material cut, they are far cheaper. We are prepared to stand back of these statements. Eventually you will use one. Full directions for use with each saw. Free lessons and demonstrations given local purchasers. Priced 8" \$5.50; 10" \$6.50; 12" \$7.50. Larger sizes on request. Wilfred C. Eyles, 2025 Foothill Blvd., Oakland, Calif.

MINERALS

Blood Red Garnets of excellent quality. 15 for \$1.00. F. L. Noy, Green's Farms, Conn.

Australian Opals of all kinds: Rough, partly polished and cut, all prices. Write for free catalogue. Sample Selections for Collectors and Lapidaries: Good assortment \$5.00, \$10.00. Opal Bead Necklaces: Beautifully graded and polished from \$25.00 each. Mineral Specimens: Cerussite, Tantalite, etc. Write for list. Norman Seward, "Opal House", Melbourne, Australia.

For Sale: Rare Geodes, all kinds and sizes, 15c up to \$1.00. Also coal fossils with nice fern leaves. Wm. Erdmann, Danville, Illinois.

Scott Rose Quartz Co.—Rose Quartz, Black Hills specimens, all kinds and colors; for rock gardens, cabinets, etc. Boxes: 24 specimens, \$1.00; 18 specimens, 50c; 15 specimens, 35c. Postage paid. Box 516, Custer, S. Dak. Send stamp for price list.

Minerals, Fossils, Indian Relics, Books, Coins, Curios, Stamps, Old Glass. Catalogue 5c. Indian Museum, Osborne, Kansas.

Fine Minerals: With the World's Largest Stock of rocks, minerals, fossils and meteorites, we can serve you best. Ward's Natural Science Establishment, Inc., P. O. Box 24, Beechwood Station, Rochester, New York.

Rocky Mountain Mineral Specimen Cabinets containing from 15 to 100 specimens. Double refraction calcite and other rare specimens. Descriptive price list. Chas. O. Scott, 739 Colorado Ave., Trinidad, Colorado.

Star Sapphire cutting crystals from Ceylon; Tri-State specimens extraordinary; Green Smithsonite for cutting and cabinets. Send for lists. Glenn H. Hodson, 711 Prospect, Elmhurst, Illinois.

SPECTROSCOPES

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